IN THE CLAIMS:

Please find below a listing of all pending claims. The statuses of the claims are set forth in parentheses. For those currently amended claims, <u>underlined</u> emphasis indicates insertions and ~~strikethrough~~ emphasis (and/or double brackets) indicates deletions.

1.   (currently amended) A method of determining an alternative communication path in a communication network including a plurality of network nodes, comprising:

assuming that a network failure occurs at a location in a current communication path ~~through the network nodes~~<u>, the current communication path being a single path connecting a plurality of path network nodes in a row, the path network nodes being nodes included in the network nodes, the path network nodes being divided into first path network nodes and second path network nodes, the first path network nodes being nodes that are located on upper stream of the current communication path from the location of the network failure, and the second path network nodes being nodes that are located on down stream of the current communication path from the location of the network failure</u>;

determining a failure detected network node that detects the network failure, out of the<u> path</u> network nodes;

calculating a failure notification time for each network node, the failure notification time indicating a time from when a failure notification message is transmitted by the failure detected network node until the each network node receives the failure notification message;

selecting a first network node based on the failure notification time, out of the <u>first path</u> network nodes that are positioned in the current communication path on <u>the</u> upper stream from the location of the network failure; and

determining an alternative communication path that includes the first network node and a second network node out of the<u> second path</u> network nodes, the second

network node being positioned in the current communication path on the down stream from the location of the network failure.

2. (original) The method according to claim 1, wherein the failure notification time of the first network node is the shortest of the network nodes that are positioned on upper stream from the location of the network failure.

3. (original) The method according to claim 1, wherein the failure notification time of the first network node is smaller than a predetermined time.

4. (original) The method according to claim 1, wherein the alternative communication path allows to share an auxiliary communication capacity for other network failure.

5. (original) The method according to claim 1, wherein the failure notification time is calculated as a sum of a propagation delay time of a communication link between the network nodes and a processing time for inputting/outputting the failure notification message in the each network node.

6. (original) The method according to claim 1, further comprising calculating a recovery time of the communication path as a sum of the failure notification time of the first network node, a switching time of each network node on the alternative communication path , and a propagation delay of a signal to be transferred.

7. (currently amended) An apparatus for determining an alternative communication path in a communication network built with a plurality of network nodes, comprising:

a node selecting unit that determines a failure detected network node that detects a network failure that is assumed to occur at a location in a current

communication path ~~through the network nodes~~, the current communication path being a single path connecting a plurality of path network nodes in a row, the path network nodes being nodes included in the network nodes, the path network nodes being divided into first path network nodes and second path network nodes, the first path network nodes being nodes that are located on upper stream of the current communication path from the location of the network failure, and the second path network nodes being nodes that are located on down stream of the current communication path from the location of the network failure, out of the path network nodes, calculates a failure notification time for each network node, the failure notification time indicating a time from when a failure notification message is transmitted by the failure detected network node until the each network node receives the failure notification message, and selects a first network node based on the failure notification time, out of the first path network nodes that are positioned in the current communication path on the upper stream from the location of the network failure; and

a path searching unit that determines an alternative communication path that includes the first network node and a second network node out of the second path network nodes, the second network node being positioned in the current communication path on the down stream from the location of the network failure.

8.   (original) The apparatus according to claim 7, wherein the failure notification time of the first network node is the shortest of the network nodes that are positioned on upper stream from the location of the network failure.

9.   (original) The apparatus according to claim 7, wherein the failure notification time of the first network node is smaller than a predetermined time.

10.　　(original)　The apparatus according to claim 7, wherein the alternative communication path allows to share an auxiliary communication capacity for other network failure.

11.　　(original)　The apparatus according to claim 7, wherein the failure notification time is calculated as a sum of a propagation delay time of a communication link between the network nodes and a processing time for inputting/outputting the failure notification message in the each network node.

12.　　(original)　The apparatus according to claim 7, further comprising a calculating unit that calculates a recovery time of the communication path as a sum of the failure notification time of the first network node, a switching time of each network node on the alternative communication path , and a propagation delay of a signal to be transferred.

13.　　(currently amended)　A computer program product for determining an alternative communication path in a communication network including a plurality of network nodes, said program product including computer executable instructions stored on a computer readable medium, wherein the instructions, when executed by the computer, cause the computer to perform:

　　　assuming that a network failure occurs at a location in a current communication path ~~through the network nodes~~, the current communication path being a single path connecting a plurality of path network nodes in a row, the path network nodes being nodes included in the network nodes, the path network nodes being divided into first path network nodes and second path network nodes, the first path network nodes being nodes that are located on upper stream of the current communication path from the location of the network failure, and the second path network nodes being nodes that are located on down stream of the current communication path from the location of the network failure;

determining a failure detected network node that detects the network failure, out of the path network nodes;

calculating a failure notification time for each network node, the failure notification time indicating a time from when a failure notification message is transmitted by the failure detected network node until the each network node receives the failure notification message;

selecting a first network node based on the failure notification time, out of the first path network nodes that are positioned in the current communication path on the upper stream from the location of the network failure; and

determining an alternative communication path that includes the first network node and a second network node out of the second path network nodes, the second network node being positioned in the current communication path on the down stream from the location of the network failure.

14.   (original) The computer program product according to claim 13, wherein the failure notification time of the first network node is the shortest of the network nodes that are positioned on upper stream from the location of the network failure.

15.   (original) The computer program product according to claim 13, wherein the failure notification time of the first network node is smaller than a predetermined time.

16.   (original) The computer program product according to claim 13, wherein the alternative communication path allows to share an auxiliary communication capacity for other network failure.

17.   (original) The computer program product according to claim 13, wherein the failure notification time is calculated as a sum of a propagation delay time of a

communication link between the network nodes and a processing time for inputting/outputting the failure notification message in the each network node.

18.   (original) The computer program product according to claim 13, further comprising calculating a recovery time of the communication path as a sum of the failure notification time of the first network node, a switching time of each network node on the alternative communication path , and a propagation delay of a signal to be transferred.